

tein in some cases seemed to be due to lack of power on the part of the organism to build up protein, and in other instances to the overfeeding with carbohydrates. The high water content of the organism in both premature and athreptic infants must be regarded as an important factor in the low immunity they show, thus predisposing these infants to multiple infections. Besides this high water content of the organism, the athreptic infants showed a very low rate of blood flow, which in some instances was due partly to the diminished blood volume, and in other instances to constriction of the peripheral small vessels in order to accomplish the distribution of the blood to the internal organs. This constriction of the peripheral vessels is proved by the differences found in the blood count and hemoglobin content between capillary and venous blood. The low blood flow is not usually accompanied by a lowering of blood-pressure because of compensatory factors such as diminution of the blood bed by atrophy of the skin, subcutaneous tissues and musculature; by contraction of the small peripheral vessels; and by possible change in the alimentary bloodvessels. This low rate of blood flow will contribute in lessening the resistance of these infants by depriving the body tissues of the necessary food, and in this way contribute to the breakdown of the body cells. Experiments on rabbits have shown that during complete starvation with deprivation of fluid, the body volume falls below the normal value for the body surface as a result of water loss from the blood. By giving only food and water to prevent further weight loss the blood volume is rapidly restored and quickly reached a value above normal for the body surface. When these findings are applied to infants it can be seen that in athreptic infants who show a lowering of blood volume all the above-mentioned factors will still further affect the organism, and all factors will work together in lowering the oxidizing power of the body cells and favor a breaking down of body tissues.

A Method of Determining the Appropriate Dose of Tuberculin for the Individual Tuberculous Child.—SOLIS-COHEN (*Arch. Ped.*, November, 1920); in determining the appropriate dose of tuberculin for the individual child, first makes the test for tuberculin hypersensitiveness. He injects intracutaneously into the patient's forearm at the same time 1000000 mg. distally, 100000 mg. medially, and 10000 mg. proximally, the injections being made in a diagonal line. This is done to avoid the same lymph channels, and there is less danger of the lymphatics carrying tuberculin from the large injection to the smaller. Twenty-four to forty-eight hours after the injections are made, their sites are examined for the presence of a papule or for induration, either of which is regarded as evidence of a reaction. If no reaction occurs 10000 mg., 1000 mg. and 100 mg. are injected into the other arm in the same manner in which the first injections were made, the smallest dose being distally and the largest dose being proximally. If still no reaction occurs, 10 mg., and 1 mg. are injected, and, if necessary at a still later time 10 mg. are injected. The smallest dose that produces a distinct reaction is administered therapeutically either by mouth or subcutaneously. The initial dose determined in this manner has never produced any untoward reaction in the hands of the author, although in some cases it was as high as 100 mg. If this dose produces

a favorable reaction such as increase of appetite, reduction of temperature, a general feeling of improvement it is repeated every three to five days until it loses its effect, when it is gradually increased until it again produces a favorable reaction. If it seems to produce no effect, it is repeated for several weeks and then increased. If any dose produces an unfavorable reaction such as rise of temperature, anorexia, malaise and the like, it is reduced. At intervals tests for hypersensitiveness are again made in the forearm, by injecting the dose that the patient is taking, and doses of $\frac{1}{10}$ of and ten times this amount. If no reaction occurs from any of these doses doses of one hundred times and ten thousand times the amount the patient is taking, are injected. If the amount producing the intracutaneous reaction is greater than the amount being given therapeutically, the latter is increased rapidly until it corresponds to the former. The writer has used the method mostly in children, and has given tuberculin Rückst (T.R.), because in his experience he has obtained the best reaction from this form. It does not seem to make any difference whether the tuberculin is given by mouth or subcutaneously. Some patients do better on one and some on the other method. He does not as a rule give tuberculin to patients who are doing well without it.

OBSTETRICS

UNDER THE CHARGE OF

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The Significance of Diphtheria Bacilli in the Body of the Mother Infecting the Child.—LÖNNE (*Zentralbl. f. Gynäk.*, 1920, No. 37) has made investigations in the clinic at Göttingen to determine the possibility of infection in newborn infants from diphtheria bacilli in the birth canal of the mother. It is well established that diphtheria bacilli are often present in the mouth and throat of persons apparently well. Very frequently patients suffering from slight sore-throat show the presence of these infected germs. Patients recovering from diphtheria frequently have the diphtheria bacilli in the urine. Evidently in both these cases it would be possible for the mother to infect the child. Regarding infants it must be remembered that nurses and attendants in hospitals and private houses may be diphtheria carriers. This has happened in a number of cases and it can readily be seen that under such conditions infants might easily become infected. As to the length of time during which diphtheria bacilli can exist in the human body after apparent convalescence, an instance is recorded where the diphtheria bacilli were found ninety-two days after a patient's recovery from the disease, and not infrequently from sixty-three to eighty-four days after the first positive result of examination for the diphtheria germ. As late as ten weeks after an attack of diphtheria, patients may pass the characteristic bacilli in the urine. In the case of infants, in two well-established instances, diphtheria germs gained access to the umbilicus after the separation of the cord. Again in

some cases, infants suffering from the presence of diphtheria germs in the umbilicus may be admitted to nurseries and thus infect other children. Sittler reports a case where diphtheria bacilli were found on the nipple of a nursing mother. It is more than probable that a diphtheritic infant might infect the nipples of a nursing mother. Cases have been observed where diphtheria bacilli were present upon ulcerated surfaces in the genital canal in women recovering from labor. Bumm and others have demonstrated the presence of diphtheria bacilli in the vagina in a pseudomembrane and the inference is a natural one that diphtheria bacilli in these cases could readily be conveyed to the newborn. In order to make further tests of the matter, the writers examined thoroughly a considerable number of patients in their clinic. In all 42 healthy patients were examined and from each one several smear cultures were made. In none of these cases could the characteristic diphtheria bacillus be recognized. Bacteria were found which at first sight very closely, at least, resembled the so-called diphtheria germ, but, on closer examination, these were classified as pseudo-diphtheria bacilli. In one case where a pure culture and smear preparations pointed to a positive diagnosis, inoculation on animals was practised without reaction. The growth on agar did not indicate diphtheria. The writers believe that a positive diagnosis of vaginal diphtheria or of the presence of the diphtheria bacilli in the vagina can be made only when smear cultures show positively the characteristic germ and when in unselected cases a pure culture can be obtained. They do not deny the possibility of the presence of diphtheria bacilli in the genital tract of healthy pregnant women, but they believe that such must be a rare occurrence. In their experience it is much more important to scan closely those persons who act as nurses and attendants in nurseries and hospitals containing infants. The throats of these persons should be thoroughly examined and oftentimes in them will be found the source of infection. They would have, if possible, an isolation room for all children brought to an infants' hospital, where a child could be retained under observation until it could be positively determined that infective disease was absent. It is, however, difficult on account of the expense and room required to carry out such a provision.

Syphilis in Pregnancy and Labor.—CORNELL and STILLIANS (*Am. Jour. Syph.*, 1920, No. 4, p. 342) draw attention to the fact that there is great difference of opinion concerning the frequency of syphilis. Some place it as high as 16 per cent, others as low as 3 or 4. Such differences can be explained by the kind of material which has been the subject of study. In a dispensary resembling private practice, every patient was examined by the Wassermann test. If syphilis is as frequent as indicated by the high percentages, there must be many mistakes in diagnosis. Sixty-nine patients were so examined, 2 giving a strong positive and 1 a weak positive reaction. The strong reactions were obtained in negro women and one-half of them were evidently syphilitic. Twenty-six per cent of these patients gave a history of abortion or stillbirth. The reason for this condition did not become evident in the investigation. Of the pregnancies occurring among these patients, one-third of all resulted disastrously. This is frequently caused by poor living conditions and lack of prenatal care

among the poor. Those who have no proper attention frequently possess poor teeth, tonsils which are infected, chronic appendicitis, chronic inflammation of the gall-bladder. Among private patients, about 20 per cent. gave a history of abortion or stillbirth. DOUGAL and BRIDE (*British Med. Jour.*, 1920, No. 1, p. 632) studied 100 unselected cases of abortion to ascertain the cause. In most of the cases pregnancy was interrupted during the first half. In about 40 per cent. between third and fourth months. There had been no previous pregnancy in 17 per cent; 80 per cent had born children at term and one-third of the patients had had more than three pregnancies. Previous abortion had occurred in 40 per cent., but most of them had but one abortion. In searching for the cause among 28 patients, there were mechanical causes in 13, the action of lead in 8, in 2 shock, in 1 a kick in the abdomen, in 1 an injury to the foot, in 2 the use of a syringe or some instrument and in 1 unusual disturbance. There were 22 cases in which a local condition seemed to be the cause. Among these 5 had an abnormal position or shape of the uterus; in 2 there were fibroid tumors; 3 had had abdominal sections previously; influenza had attacked 3 and 2 had placenta previa. There were 7 patients who had various medical conditions. In 12 cases, the positive Wassermann reaction was found and in 6 there was no other apparent cause. In over half of the cases what seemed to be an adequate cause for the accident could be determined. So far as the pathology of the condition was concerned, hemorrhage into some portion of the embryo or ovum was usually present. It is interesting to note that of the 12 cases giving a positive reaction for syphilis, 11 had already had children at full term. It could not be shown that there is any association between a positive Wassermann reaction and repeated abortion. Probably syphilis is not responsible for more than 10 per cent. of abortions. In summing up their observations, the authors find that in 18 per cent. there was an accidental or reflex cause; in 25 per cent. some constitutional condition of the mother or disease or displacement of the uterus or some pronounced change in the embryo and its appendages. Of all abortions 20 per cent. are produced by the patients themselves. When all things are considered, it becomes evident that the precise cause of abortion cannot be ascertained in about one-third of all cases.

The Relation of the Insertion of the Round Ligaments during the Expulsive Period of Normal Labor as Indicating Uterine Ruptures.—AUER (*Zentralbl. f. Gynäk.*, 1920, Nr. 38), in the clinic in Bonn has studied cases of labor to observe the position of the point of insertion of the round ligaments. He describes the case of a primipara, aged twenty-nine years, with flat and rachitic pelvis, who entered the hospital after the rupture of the membranes. The child was in second position, the head movable above the pelvis. On internal examination, the membranes had partly refilled and one could not make out the sutures and fontanelle. There was a double promontory and partial dilatation. The true conjugate was approximately 8 cm. During the night following admission very little progress was made in the labor. The head was still movable above the pelvic brim; the back was still to the right and the lower segment had distended, but